

AMENDMENTS TO THE SPECIFICATION:

Please delete the word "Description" at page 1, line 1.

Please add the following centered heading on page 1, line 5:

TECHNICAL FIELD

Please amend the paragraph on page 1, lines 6, as follows:

~~The invention relates to~~ This patent application describes a circuit arrangement for protecting an integrated semiconductor circuit comprising a protection circuit, which contains a thyristor structure and is connected between an element to be protected and a reference potential, and comprising a control circuit for driving the protection circuit, and also to a corresponding method for protecting an integrated semiconductor circuit.

Please add the following centered heading on page 1, line 14:

BACKGROUND

Please add the following centered heading on page 3, line 16:

SUMMARY

Please amend the paragraph on page 3, lines 17-23, as follows:

~~The invention is based on the object of specifying a~~ A circuit arrangement and a method for protecting integrated semiconductor circuits which enable an improved behavior is disclosed.

Furthermore, ~~the intention is to specify~~ a circuit arrangement and a method which ~~are~~ are in particular also suitable for high-voltage processes or for high-voltage applications is disclosed.

Please delete the paragraph on page 3, lines 25-26 which begins with "The invention achieves this object" in its entirety.

Please amend the paragraph on page 3, lines 28 to 34, as follows:

~~The invention has the advantage that the~~ The circuit arrangement has an actively triggered protection circuit and the corresponding method ~~enable~~ enables the thyristor structure to be turned on rapidly. Furthermore, the ~~invention~~ circuit arrangement can be integrated in high-voltage applications which are produced using high-voltage processes.

Please delete the paragraph on page 3, lines 36-37 which begins with "The dependent patent claims relate to" in its entirety.

Please amend the paragraph on page 4, lines 1 to 5, as follows:

~~The invention is~~ Embodiments of the circuit arrangement are explained in more detail below on the basis of exemplary embodiments in connection with the figures. Identical or identically acting elements are provided with the same reference symbols in the figures.

Please add the following centered heading on page 4, line 6:

DESCRIPTION OF THE DRAWINGS

Please amend the paragraph on page 5, lines 9-31, as follows:

Figures 1A-1C show schematic representations of a ~~figure 1 shows a schematically illustrated~~ circuit arrangement comprising a protection circuit and a control or a trigger circuit. [[,]]

Figures 2A-2B show schematic representations of a ~~figure 2 shows a second schematically illustrated~~ circuit arrangement comprising a protection circuit and a trigger circuit. [[,]]

Figure ~~figure~~ 3 shows a schematic representation of a ~~a third schematically illustrated~~ circuit arrangement comprising a protection circuit and a trigger circuit. [[,]]

Figure ~~figure~~ 4 shows a schematic representation of a ~~fourth schematically illustrated~~ circuit arrangement comprising a protection circuit and a trigger circuit. [[,]]

Figure ~~figure~~ 5 shows a schematic representation of a ~~further schematically illustrated~~ circuit arrangement comprising a protection circuit and a trigger circuit. [[,]] ~~and~~

Figure ~~figure~~ 6 shows a schematic cross section through a structure for realizing the thyristor in a high-voltage process.

Please add the following centered heading on page 4, line 32:

DETAILED DESCRIPTION

Please amend the paragraph on page 4, line 1 to page 5, line 6, as follows:

~~In figure 1, the invention is elucidated in greater detail in principle and on the basis of two exemplary embodiments.~~ In accordance with figure 1a, a terminal PV is connected to a line

Lv, which is at a potential W. The potential W may be e.g. the positive supply potential VDD or the potential of an input/output terminal (110 pad). The terminal PV and the line LV are to be protected against transient pulses or against overvoltage. Said overvoltage must be dissipated to a reference potential VB, which may be the ground potential, by way of example. The line LB carrying the reference potential VB is connected to the terminal PB.

Please amend the paragraph on page 6, line 22 to page 7, line 2, as follows:

An ~~A first concrete~~ exemplary embodiment ~~of the invention~~ is illustrated in accordance with figure 1b). The protection circuit is embodied as a thyristor SCR having the two transistors T1 and T2. T1 is a pnp transistor connected by its emitter to the voltagecarrying line LV, while T2 is an npn transistor connected to the reference potential VB on the emitter side. The collectors of the two transistors are cross-connected to the base of the respective other transistor. In an integrated circuit, a transistor structure of this type may be realized, in a manner known per se by an n-type and p-type well, respectively, having well resistors RN and RP, respectively, and highly doped regions correspondingly arranged therein, see figure 6 and schematically figures 3 to 5. The resistors RN and RP are not depicted in figures 1 and 2 for the sake of a better understanding of the mode of operation of the ~~invention~~ circuit arrangement.

Please amend the paragraph on page 10, lines 14-23, as follows:

The circuit arrangements of figure 2 show a second exemplary embodiment ~~of the invention~~. In contrast to the exemplary embodiments shown in figure 1, an additional circuit is provided in the circuit arrangements from figure 2, which additional circuit determines how long

the control circuit remains active. It is thereby possible to ensure that the control signals of the control circuit activate the thyristor SCR at least until the transient pulse on the line LV or the terminal PV has certainly decayed.

Please amend the paragraph on page 13, lines 17-28, as follows:

In accordance with a third exemplary embodiment ~~of the invention~~, the control circuit in figure 3 is realized by a detector circuit with control transistors TH1 and TE1 connected downstream as output switching elements. The detector circuit: contains two subcircuits, one of which drives the transistor T1 and the other of which drives the transistor T2. In principle, in this case, too, each detector subcircuit contains, for transient identification, an RC element comprising the series circuit formed by a capacitance and a resistor, said RC element being connected to the lines LV and LB and the corresponding terminals PV and PB.

Please amend the paragraph on page 17, lines 10-16, as follows:

Figure 4 shows a fourth exemplary embodiment ~~of the invention~~, which differs from the exemplary embodiment of figure 3 essentially by virtue of the fact that additional gate driver transistors are used. An improvement of the switching behavior of the control or 15 trigger transistors TH10 and TL10 thus becomes possible.

Please amend the paragraph on page 18, line 35 to page 19, line 7, as follows:

In accordance with this embodiment ~~of the invention~~, as a result of the use of individual transistors in the control circuit no inverters are required in order to trigger the protection circuit's SCR. It is possible to optimize the individual transistors which are used as switching elements

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of the control circuit in any process for producing the integrated circuit, in particular in high-voltage processes, but also in standard processes. Consequently, an optimized protection circuit can be produced even using a highvoltage process as well as in low-voltage processes.

Please delete the phrase "(Fig. 1b)" on page 26, line 24.

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Please replace the Abstract on page 26 with the following new Abstract:

A circuit arrangement for protecting an integrated semiconductor circuit includes a a protection circuit connected between an element to be protected and a reference potential. The protection circuit includes a thyristor structure. The circuit arrangement also includes a control circuit configured to drive the protection circuit by generating a plurality of control signals drive an active element of the protection circuit.